

## PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference H3242 PCT	FOR FURTHER ACTION <span style="float: right;">See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)</span>	
International application No. PCT/US 03/18232	International filing date (day/month/year) 10.06.2003	Priority date (day/month/year) 10.07.2002
International Patent Classification (IPC) or both national classification and IPC B29C33/42		
Applicant 3M INNOVATIVE PROPERTIES COMPANY et al.		

<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheets.</p>
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> <li>I <input checked="" type="checkbox"/> Basis of the opinion</li> <li>II <input type="checkbox"/> Priority</li> <li>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</li> <li>IV <input type="checkbox"/> Lack of unity of invention</li> <li>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</li> <li>VI <input type="checkbox"/> Certain documents cited</li> <li>VII <input type="checkbox"/> Certain defects in the international application</li> <li>VIII <input type="checkbox"/> Certain observations on the international application</li> </ul>

Date of submission of the demand 31.12.2003	Date of completion of this report 08.10.2004
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer  Alink, M Telephone No. +49 89 2399-6076



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**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-17 as published

**Claims, Numbers**

1-10 as published

**Drawings, Sheets**

1/10-10/10 as published

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

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5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	7-10
	No: Claims	1-6
Inventive step (IS)	Yes: Claims	
	No: Claims	1-10
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

**see separate sheet**

Section V

1. Reference is made to the following documents:

D1: US-A-5 462 702 (SLAUGHTER JR GIBBS M) 31 October 1995

D2: US-B-6 251 2081 (SERIZAWA SHOGO ET AL) 26 June 2001

2.1 The flexible mold in claim 1 is characterised by the viscosity of the materials used during the manufacturing process. For the skilled man, when observing the flexible mold, it is not possible to determine which viscosity said raw materials possessed before the curing step.

A product can only be considered new and inventive when it is characterised by new and inventive features. A product is not to be considered new and inventive because it is obtained by a new and inventive process.

Document D1 (cf. column 3, line 28 - column 4, lines 6) describes a flexible mold having a groove pattern having a predetermined shape and a predetermined size on a surface thereof, comprising a base layer made of a curable material (cf. second layer 27) and a coating layer made of a second curable material (cf. first layer 23).

Therefore the subject matter of claim 1 is not novel as required under Article 33(2) PCT.

2.2 Document D1 further discloses a method of manufacturing a microstructure having a projection pattern having a predetermined shape and a predetermined size on a surface of a substrate, comprising the steps of:

- preparing a flexible mold having a groove pattern having a shape and size corresponding to those of said projection pattern on a surface thereof, and including a base layer made of a first curable material (cf. column 3, line 28 - column 4, lines 6, second layer 27) and a coating layer made of a second curable material (cf. column 3, line 28 - column 4, lines 6, first layer 23);
- arranging a curable molding material between said substrate and said coating layer of said mold and filling said molding material into said groove pattern of said mold (cf. D1 column 5, lines 5 -16, column 6, lines 2 - 12);
- releasing said microstructure from said mold (column 6, lines 13 - 15)

The subject matter of claim 7 differs therefrom that said first curable material is having a viscosity of 3,000 cps to 100,000 cps at 10 to 80 °C.

It should be noted that although document D1 not implicitly mentions that the applied said second curable material is having a viscosity of not greater than 200 cps at 10 to 80 °C material, the fact that it is applied in a liquid state combined with the wide temperature range as being referred to in claim 7, suggests that the second curable material conforms to said viscosity requirement.

The subject matter of claim 7 is therefor new in the sense of Article 33(2) PCT.

The underlying problem is to provide a flexible mold which can highly precisely manufacture the desired product without the occurrence of bubbles and pattern deformation (cf. page 3, lines 8 - 17, page 3, line 27 - page 4, line 5, page 4, lines 7 - 10).

The solution according to claim 7 is not implicitly mentioned in any of the documents cited in the search report, thereby suggesting the presence of an inventive step in the sense of Article 33(3) PCT. The attention is however drawn to document D2, which mentions the use of a rigid base layer in combination with an elastic surface layer. The features of claim 7, whereby the first curable material possesses an high viscosity in comparison to the second curable material, appear to be a similar combination of a rigid material and an elastic layer even though in D2 the applied base layer is a metal sheet. Since the idea of a soft/rigid combination in the same application (cf. D2, column 1, lines 11-23) is known, the application of said common knowledge appears to be nothing more than an obvious design option for the skilled man without the exercise of an inventive step in the sense of Article 33(3) PCT.

3. The following is noted too:

(a) Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1 and D2 is not mentioned in the description, nor are these documents identified therein.

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- (b) Independent claims 1 and 7 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- (c) The features of the claims are not followed by the reference signs relating to said features (Rule 6.2(b) PCT).